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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/917,856	07/31/2001	Hirokazu Takeuti	100725-00046	9456

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EXAMINER

VALENCIA, DANIEL E

ART UNIT	PAPER NUMBER
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2874

DATE MAILED: 05/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/917,856

Applicant(s)

TAKEUTI ET AL.

Examiner

Daniel E Valencia

DU

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 April 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 13-32 is/are allowed.
- 6) ☒ Claim(s) 1,3,4,6-9 and 12 is/are rejected.
- 7) ☒ Claim(s) 2,5,10 and 11 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: Brian Healy

### **DETAILED ACTION**

Applicant's communication filed on September 20, 2002 has been carefully studied by the Examiner. Some of the arguments advanced therein are persuasive and the rejections regarding claims 13 and 25 based upon prior art made of record in the previous Office Action are withdrawn. Many of applicant's claims are now allowable.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 7-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Ueda U.S. Patent No. 5,790,732. Refer to the appropriate drawings or parts of the specification. Ueda discloses an optical connector with a protective coating with all the limitations of the abovementioned claims. Regarding claim 1, Ueda discloses a preliminary member of an optical device component with optical fiber comprising a long capillary (see fig 1 and 2) tube made of glass or crystallized glass and an optical fiber inserted and fixed in an inner hole of the long capillary tube (col. 2, lines 18-33), the preliminary will produce, by cutting, a plurality of short capillary tubes with optical fibers each of which composes an optical device component to be connected to an optical

connector (see claim 6). Although the reference to does not explicitly state that a plurality of short capillary tubes can be formed from the preliminary member, this would be inherently disclosed in the reference due to the fact that a long preliminary member is used to make a short glass capillary for a connector. Ueda further discloses that the long capillary tube is manufactured by a drawing formation method (see claim 6), as mentioned by instant claim 7. With reference to claims 8 and 13, Ueda discloses that the long capillary tube comprises a flare portion at an end portion of the inner hole for guiding the optical fiber (5). Ueda discloses that the capillary tube has a mechanical strength, which has been enhanced by creating a compressive stress layer on the surface method (see claim 3), as explained in instant claim 9.

In the response, Applicant asserts that the prior art does not anticipate the claim, because the reference does not teach a preliminary member which is cut with the fiber therein. Rather, Ueda discloses a preliminary member that is *first cut* and then a fiber is inserted for use in a connector. However, Applicant is claiming a product not a method of making. The use of "cutting, a plurality of short capillary tubes with optical fibers " is a method limitation. The Patent being sought in claim 1 is an end product that is met by the Ueda reference. The U.S. Patent Office is not equipped to experiment or test the myriad of ways or processes in which a preliminary member may be made to determine whether the claimed product by process contains some technical advantage over that of the prior art. Additionally, it is Applicant's responsibility to prove that the process claimed has some beneficial improvement over the process of the prior art. Examiner would also point out that "cutting a plurality of short capillary tubes with optical fibers"

has not been given any patentable weight in the abovementioned product claim; however, this limitation in the form of method claims 13 and 25 has been given weight and distinguishes the claimed invention over the prior art (*See Reasons For Allowance*).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueda. Refer to the appropriate drawings or parts of the specification. Ueda does not explicitly state that the preliminary member is 50% transparent to wavelengths in the range of 350-500nm (UV wavelengths). However, the reference does state that the fiber is adhered to the inside of the preliminary member using UV curable adhesive that passes through the coating of the member (col. 4, lines 40-45). It is known that ultraviolet wavelengths range from about 350 to 500 nm, therefore it would be obvious to one of ordinary skill in the art at the time of invention that at least 50% of ultraviolet (350nm-500nm) would pass through the glass capillary in order to cure the adhesive, as described in claim 4. Regarding claim 6, although not explicitly stated, it would be obvious that the glass capillary tube would pass at least 30% or more of light within 700 nm-2500 nm; because such a wider range of wavelengths would pass through the capillary tube due to the transparent properties of glass. Additionally, it is well known

that preferred optical communication wavelengths fall in the specified range (~1300nm and 1550nm). Therefore it would have been obvious to one of ordinary skill at the time of invention that at least 30% of light in that specified range would pass through the optical preliminary member disclosed in Ueda.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ueda in view of Andersen U.S. Patent No. 6,190,055. Refer to the appropriate drawings or parts of the specification. Ueda as applied above, discloses an optical connector with protective coating with a majority of the claimed limitations of the present invention. Ueda however, fails to disclose the use of this type of glass capillary member for an optical fixed attenuator.

On the other hand, Andersen discloses an optical assembly that teaches the limitations that the Ueda reference fails to mention. Regarding claim 12, Andersen discloses a preliminary member with a majority of the limitations of claim 1, wherein the optical device component is a component for an optical fixed attenuator and the optical fiber has a predetermined attenuation factor (col. 1, lines 5-15). Although Anderson does not explicitly state that the fiber has a constant attenuation factor, it is well known that all fibers have some constant attenuation factor. Both Anderson and Ueda disclose methods of making glass capillary for bare fibers, wherein the components become part of optical devices. One of ordinary skill in the art would be motivated to combine the teachings and suggestions of both references. Therefore, it would have been obvious

to one of ordinary skill in the art at the time the invention was made to use the component disclosed in Ueda in affixed optical attenuator.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ueda. Refer to the appropriate drawings or parts of the specification. Ueda discloses that the capillary member is made of glass, such as the capillary member in the claimed invention. Although Ueda does not explicitly states that the capillary has a linear expansion coefficient less than  $7 \times 10^{-6} /K$ , the capillary tube is made of glass or some material similar in properties to fibers. It is known that fibers have a linear coefficient that is less than  $7 \times 10^{-6} /K$ , therefore this limitation, mentioned in claim 3, therefore it would have been obvious to an ordinarily skilled artisan at the time of invention that the capillary member disclosed in Ueda would have a coefficient of linear expansion less than  $7 \times 10^{-6} /K$ .

***Allowable Subject Matter***

Claims 2, 5, 10, and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

As to dependent claim 2, the prior art alone or in combination fails to disclose or render obvious a preliminary member of an optical device component with optical fiber as set forth in claim 1, wherein the overall length thereof is 20 mm or more. For example, Ueda discloses a preliminary member that meets all the limitations of claim

1; however, the reference does not say anything about the length of the preliminary member.

For reasons for indicating allowable subject matter regarding claim 5, see Paper No. 5.

As to dependent claim 10, the prior art alone or in combination fails to disclose or render obvious a preliminary member of an optical device component with optical fiber as set forth in claim 1, wherein an external surface of the long capillary tube is polygonal. Ueda, as the closest prior art, does not teach or suggest the use of a polygonal capillary member.

With reference to claim 11, the prior art alone or in combination fails to disclose or render obvious a preliminary member of an optical device component with optical fiber as set forth in claim 1, wherein an external surface of the long capillary tube is cylindrical and provided with a flat portion or groove extending in the longitudinal direction. Ueda, as the closest prior art, discloses a completely cylindrical member and does not suggest the use of a groove or flat surface.

Claims 13-32 are allowed.

The following is an examiner's statement of reasons for allowance: As to independent claim 13, the prior art alone or in combination fails to disclose or render obvious a method for manufacturing a preliminary member of an optical device component with optical fiber, the preliminary member will produce, by cutting, a plurality of short capillary tubes with optical fibers each of which composes an optical device



component to be connected to an optical connector, comprising the steps of:  
manufacturing a long capillary tube by forming softened glass or crystallized glass;  
providing a substantially conical flare portion at an end portion of the long capillary tube  
for guiding the optical fiber to an inner hole of the long capillary tube; filling an adhesive  
into the inner hole of the long capillary tube; inserting a long fiber whose covering has  
been removed into the inner hole through flare portion; and curing the adhesive to fix  
the optical fiber in the long capillary tube. Ueda discloses a similar type of capillary  
forming method; however, the reference discloses that the fiber is inserted in the inner  
hole *after* the preliminary member is cut. In contrast, the claimed invention cuts the  
preliminary member with the fiber therein and the fiber is inserted *before* the preliminary  
member is cut.

With reference to independent claim 25, the prior art alone or in combination fails  
to disclose or render obvious an optical fiber stub made by a manufacturing method, the  
optical fiber stub connected to an optical connector, the method comprising the steps of:  
forming softened glass or crystallized glass into a long capillary tube; inserting and  
fixing a long optical fiber into an inner hole of the long capillary tube along almost the  
entire length of the inner hole to manufacture a long capillary tube with optical fiber;  
cutting the long capillary tube with optical fiber into a plurality of first capillary tubes with  
optical fibers each of which has a predetermined length; and polishing end faced of the  
first capillary tube with optical fiber. Ueda discloses a similar type of capillary forming  
method; however, the reference discloses that the fiber is inserted in the inner hole *after*  
the preliminary member is cut. In contrast, the claimed invention cuts the preliminary

member with the fiber therein and the fiber is inserted *before* the preliminary member is cut.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel E Valencia whose telephone number is (703)-305-4399. The examiner can normally be reached on Monday-Friday 9:30-6:00.

The fax phone numbers for the organization where this application or proceeding is assigned are (703)-308-7724 for regular communications and (703)-308-7724 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)-308-0956.



dv  
May 8, 2003



Brian Healy  
Primary Examiner